109-1 Full Curriculum of Da-Yeh University

Information			
Title	Embedded System	Serial No./ID	2059 /ENI4014
Required/Credit	Optinal /3	Time/Place	(Tue)678 /H727
Language	Chinese	Grade Type	Number
Lecturer /Full- or Part-time	Yih-Fang Chang /Part-time	Graduate Class	Graduating Class
School System /Dept /Class, Grade	Bachelor /College of Engineering /Class 1, Grade 4		
Office Hour / Place	(Tue) 13:20~14:10, (Wed) 13:20~14:10, (Thu) 13:20~14:10, (Thu) 14:20~15:10 / H215		
Lecturer	n.a.		

Introduction

A student can take the ability of basic micro-computer and embedded system design
1.1 The basic ability of micro-computer and embedded system application
1.2 The practical ability of micro-computer and embedded system application
1.3 The knowledge of the micro-computer and embedded system with the followings:
Software prescription, sensor, dedicated machine, human machine interface, wire communication

Outline

Unit 1： Micro computer and embedded Systems and Codes
Unit 2： Software prescription ability
Unit 3： Sensors
Unit 4： Dedicated machine
Unit 5： Human machine interface and Wire communication

Prerequisite

Basic physics and electrical circuit

The Relationship Between Courses and Departmental Core Competencies and Basic Skills

- Ability to apply knowledge of mathematics, science, and engineering.
- Knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning.
- Ability to design and conduct experiments, as well as to analyze and interpret data.
- Ability to apply techniques, skills, and modern tools necessary for engineering practice.
- Ability to design an engineering system, component, or process.
- Ability to manage project (including budgeting), communicate effectively, work in multi-disciplinary environment, and function on teams.

- Ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions.
- Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity.

Teaching Plan						
Core Capability	Weight(%)【A】	Ability index(Performance Indicators)	Teaching Methods	Assessment and Weight	Core Competency Learning Outcomes【B】	Final Exam Grades【C=B*A】
Ability to apply knowledge of mathematics, science, and engineering.	5	Ability to apply knowledge of mathematics, science, and engineering.	Lecturing Practical Operation (Experiment, Machine Operation Group Work	Assessment on Teamwork: 20% Written Report: 20% Course Participation: 20% Midterm Exam: 20% Experiment Operation: 20%	Total: 100	5
Ability to design and conduct experiments, as well as to analyze and interpret data.	15	Ability to design and conduct experiments, as well as to analyze and interpret data.	Lecturing Practical Operation (Experiment, Machine Operation	Course Participation: 20% Midterm Exam: 20% Assessment on Teamwork: 20% Experiment Operation: 20% Written Report: 20%	Total: 100	15
Ability to apply techniques, skills, and modern tools necessary for engineering practice.	10	Ability to apply techniques, skills, and modern tools necessary for engineering practice.	Lecturing Group Work Practical Operation (Experiment, Machine Operation	Midterm Exam: 20% Course Participation: 20% Written Report: 20% Assessment on Teamwork: 20% Experiment Operation: 20%	Total: 100	10
Ability to design an engineering system, component, or process.	20	Ability to design an engineering system, component, or process.	Practical Operation (Experiment, Machine Operation Lecturing Group Work	Written Report: 20% Assessment on Teamwork: 20% Course Participation: 20% Midterm Exam: 20% Experiment Operation: 20%	Total: 100	20

Ability to manage project (including budgeting), communicate effectively, work in multi-disciplinary environment, and function on teams.	20	Ability to manage project (including budgeting), communicate effectively, work in multi-disciplinary environment, and function on teams.	Lecturing Group Work Practical Operation (Experiment, Machine Operation	Written Report: 20% Assessment on Teamwork: 20% Course Participation: 20% Midterm Exam: 20% Experiment Operation: 20%	Total: 100	20
Ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions.	20	Ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions.	Lecturing Practical Operation (Experiment, Machine Operation Group Work	Written Report: 20% Assessment on Teamwork: 20% Course Participation: 20% Midterm Exam: 20% Experiment Operation: 20%	Total: 100	20
Knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning.	5	Knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning.	Lecturing Practical Operation (Experiment, Machine Operation Group Work	Midterm Exam: 20% Course Participation: 20% Assessment on Teamwork: 20% Written Report: 20% Experiment Operation: 20%	Total: 100	5
Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity.	5	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity.	Practical Operation (Experiment, Machine Operation Lecturing Group Work	Midterm Exam: 20% Course Participation: 20% Assessment on Teamwork: 20% Written Report: 20% Experiment Operation: 20%	Total: 100	5

Grade Auditing

Midterm Exam: 20%
Experiment Operation: 20%
Assessment on Teamwork: 20%
Course Participation: 20%
Written Report: 20%

Book Type (Respect intellectual property rights. Please use official textbooks and do not illegally photocopy others' works.)

Book Type	Book name	Author
Textbook	微電腦嵌入式系統應用與實習	普特企業有限公司

Lesson Plan

Weeks	Content	Teaching Methods
1	Microcomputer control practice and operation & Intellectual Property Protection (use legitimate textbooks only) & Traffic safety Propaganda	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
2	Operating system installation and instruction introduction	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
3	Setting and upload of development and design platform	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
4	Software and command introduction	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
5	Software and command introduction	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
6	Software and command introduction	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
7	Application of Microcomputer Interface-I/O	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work

8	Application of Microcomputer Interface-I/O	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
9	Midterm exam	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
10	Application of Microcomputer Interface-Analog Application	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
11	Application of Microcomputer Interface-Analog Application	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
12	Application of Microcomputer Interface-Serial Application	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
13	Application of Microcomputer Interface-Serial Application	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
14	Application of Microcomputer Interface-Serial Application	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
15	Application of Microcomputer Interface-Communication Application	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
16	Application of Microcomputer Interface-Communication Application	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
17	Application of microcomputer interface- man machine interface	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work
18	Final report	Lecturing、 Practical Operation (Experiment, Machine Operation、 Group Work